

**IN THE SPECIFICATION:**

Please amend the specification as follows:

**Page 1, ¶10:**

The present invention provides a platform for resource allocation in real-time. One or more software resource agents interact with software player agents, which are usually both [s] buyer agents and seller agents, to reach an agreement on price and quantity allocations for each buyer of that resource (for example, X Mbs of bandwidth for Y units of time, at price Z for buyer A). The [s] buyer agents operate in accordance with one or more strategy rules for that agent. A strategy rule tells the buyer agent what strategy to use in bidding against other agents for particular resources. The [s] buyer agents also operate in accordance with valuation rules that tell the how to value a particular resource when bidding (this value is often used as a part of the strategy rule). Seller agents also contain their own strategy and valuation rules, which allow them to decide how much of a resource to offer and how to set a minimum price for the resource. Both player agents (buyer and sellers) and resource agents are aware of a global allocation rule used by the resource agent to allocate a resource between the buyers. In the buyer and seller agents, this allocation rule is often considered in determining strategy.

**Page 2, ¶ 32-33:**

Fig. 1 is a block diagram of an embodiment of the present invention. Fig. 1 includes a software player agent 102, which represents multiple buyer and seller agents. A typical system will, include both buyer and seller agents 102. Fig. 1 also includes a software resource agent 104, a software accounting agent 106, a network control and management agent 108 and a resource 110. It is contemplated that resource 110 can be a number of different resources, including but not limited to: bandwidth, buffer space, memory space, storage, or processor time. As shown in Fig. 1, each player agent (buyer and seller agent) can contain a Graphical User Interface ( GUI) 122, one or more valuation rules 124, one or more strategy rules 126, and one or more allocation rules 128. The resource agent 104 also contains the same one or more allocation rules 128.

[s] Buyer agents 102 place bids to the resource agent 104, which ultimately decides which of the player agents is awarded a portion of each resource for a predetermined amount of time.

**Page 3, ¶ 38-39:**

The buyer agent 102 operates in accordance with one or more strategy rules for that agent. A strategy rule tells the buyer agent what strategy to use in bidding against other agents for particular resources and, therefore constitutes a bidding mechanism for agents.

The [s] buyer agents also operate in accordance with valuation rules that tell the buyer agents how to value a particular resource when bidding (this value is often used as a part of the strategy rule). Thus, a valuation rule typically tells an agent how to value each unit of a resource over a range of possible quantities, at a given time. Seller agents also contain their own strategy and valuation rules, which allow them to decide how much of a resource to offer and how to determine a minimum price for the resource. Strategy and valuation can depend on external information, such as accounting information and network congestion.

**Page 3, ¶ 42:**

As shown in Fig. 2, resource agent 104 receives 202 one or more bids for resource 110 from one or more buyer agents [s] 102. Such bids will usually include at least quantity and price values. If a buyer is outbid, the resource agent notifies 204 the buyer, unless the trading period is over 206. Once the trading period is over, the resource agent notifies 208 the winning agent or agents and proceeds to send an allocation command 210 to network control and management agent 108 that will cause agent 108 to control the resource in accordance with the winning bids.

**Page 4, ¶ 73-74**

It should be noted that Fig. 5 shows only how resources are allocated after bidding is closed. An allocation rule also includes within it rules or explanations of how the auction itself should be conducted. For example, a PSP auction generally lasts for a predetermined amount of time (for example, five minutes). While the bidding is open, resource agent 104 collects all bids received from the [s] buyer agents 102 and saves them in a bidlist data structure (e.g., a linked list). The bidlist data structure indicates which bid is the most recent bid for each buyer agent 102.

As bids are received from the [s] buyer agents 102 by the resource agent 104, the resource agent 104 transmits the bids received to the other buyer agents 102, so that all buyer agents know what all other participating agents are bidding. Because each buyer agent 102 has

knowledge of the allocation method, each buyer agent 102 can apply its strategy and valuation rules to determine whether that agent is going to be allocated the resources on which it has bid. The agent, applying the allocation, strategy, and valuation rules, determines whether it should bid again. In a PSP auction, bidding usually stabilizes after a few minutes. In some embodiments, resource agent 104 does not hold the auction open for a predetermined time, but instead waits a predetermined amount of time after the bidding has stabilized to make sure that no other bids are received. In some cases, resource agent 104 announces to the [s] buyer agents 102 that bidding will close in a certain number of minutes or seconds. In some cases, if a bid is received during this time period, the auction is kept open a bit longer.

**Page 5, ¶ 81:**

Figs. 7(a) and 7(b) shows examples of strategy rules. Fig 7(a) shows a simple rule set, where the first precedent is to identify the type of allocation system being used. Once the allocation system is identified, the buyer agent 102 applies a set of predefined conventional rules to determine whether it should bid (or bid again). Fig. 7(b) shows an example where the strategy is based on a user-defined function. In the example, if the function reaches a threshold value, the buyer agent 102 will bid (or bid again). Other examples of strategy rules decide not just whether the agent should bid, but how much the agent should bid, in accordance with the allocation rule being used by the system and in accordance with factors specific to that agent (such as, for example, those factors discussed above in relation to valuation rules).